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Docket No.: MOH-P990638

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By: 

Date: January 4, 2002

UNITED STATES IN THE PATENT AND TRADEMARK OFFICE

Applicant : Klaus Ludewigt et al.  
Applic. No. : 10/016,864  
Filed : December 14, 2001  
Title : Solid-State Laser

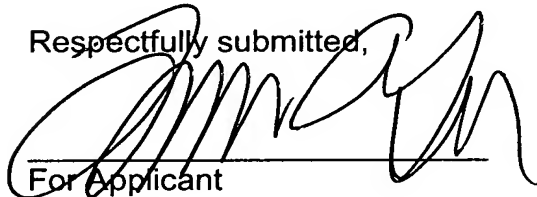
LETTER

Hon. Commissioner of Patents and Trademarks,  
Washington, D. C. 20231

Sir:

Enclosed please find a copy of the English translation of the International Preliminary Examination Report for the above-identified application. Please enter it into the file.

Respectfully submitted,

  
For Applicant

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Date: January 4, 2002

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**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 00424-9 /31	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/05049	International filing date (day/month/year) 02 June 2000 (02.06.00)	Priority date (day/month/year) 14 June 1999 (14.06.99)
International Patent Classification (IPC) or national classification and IPC H01S 3/07, 3/094, 3/06, 3/081		
Applicant ROFIN-SINAR LASER GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 10 January 2001 (10.01.01)	Date of completion of this report 29 May 2001 (29.05.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP00/05049

## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☒ the international application as originally filed.
- ☒ the description, pages 1-14, as originally filed,  
pages \_\_\_\_\_, filed with the demand,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the claims, Nos. \_\_\_\_\_, as originally filed,  
Nos. \_\_\_\_\_, as amended under Article 19,  
Nos. \_\_\_\_\_, filed with the demand,  
Nos. 1-13, filed with the letter of 10 May 2001 (10.05.2001),  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the drawings, sheets/fig 1/6-6/6, as originally filed,  
sheets/fig \_\_\_\_\_, filed with the demand,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

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## I Basis of the report

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### CONTINUATION OF BOX I.5

According to the applicant's letter of 10 May 2001, the new Claim 1 is based on the originally filed Claims 1, 10 and 12. The originally filed Claim 1 contains the feature: "the **optical axis** of which **intersects the flat sides** of a plurality of crystal slices optically arranged one after the other". This feature can no longer be found in the present Claim 1. In order to avoid an objection for inadmissible extension, the above-mentioned feature should have been kept in the claim (see PCT Rule 70.2(c)).

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-13	YES
	Claims		NO
Inventive step (IS)	Claims	1-13	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

## 2. Citations and explanations

None of the available documents discloses a laser device according to the features of Claim 1, in which at least one lens is provided as imaging element for the pump radiation in the resonator. The subject matter of Claim 1 is therefore novel.

Moreover, the combination of features in Claim 1 is not obvious to a person skilled in the art. The prior art rather guides a person skilled in the art to laser devices having reflective imaging elements for the laser and pump light radiation. The use of lenses located inside the resonator considerably simplifies the manufacture of a solid state laser according to Claim 1. It dispenses with the use of wavelength-selective mirror elements and their adjustment, and with costly compensatory measures for neutralising imaging errors that may be produced by pump light radiation propagating obliquely to the optical axis of the mirror devices. The person skilled in the art had no reason to apply the available prior art for solving the latter problem and to develop the subject matter of Claim 1 from the prior art by applying the technical features disclosed therein or his own professional knowledge, without being inventive. Claims 2-13 are dependent claims that refer directly or indirectly to Claim 1. Their

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subject matter is therefore also novel and involves an inventive step.

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**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

Independent Claim 1 should have been drafted in the two-part form defined in PCT Rule 6.3(b).

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## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The description should have been brought into line with the new, amended set of claims. It thus appears that the devices depicted in Figures 1-3, 6 and 10, for example, fall outside the present claims (a lens as imaging element is lacking). This contradiction between the claims and the description raises doubts regarding the subject matter for which protection is sought, and for this reason the claims are not clear (PCT Article 6).

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